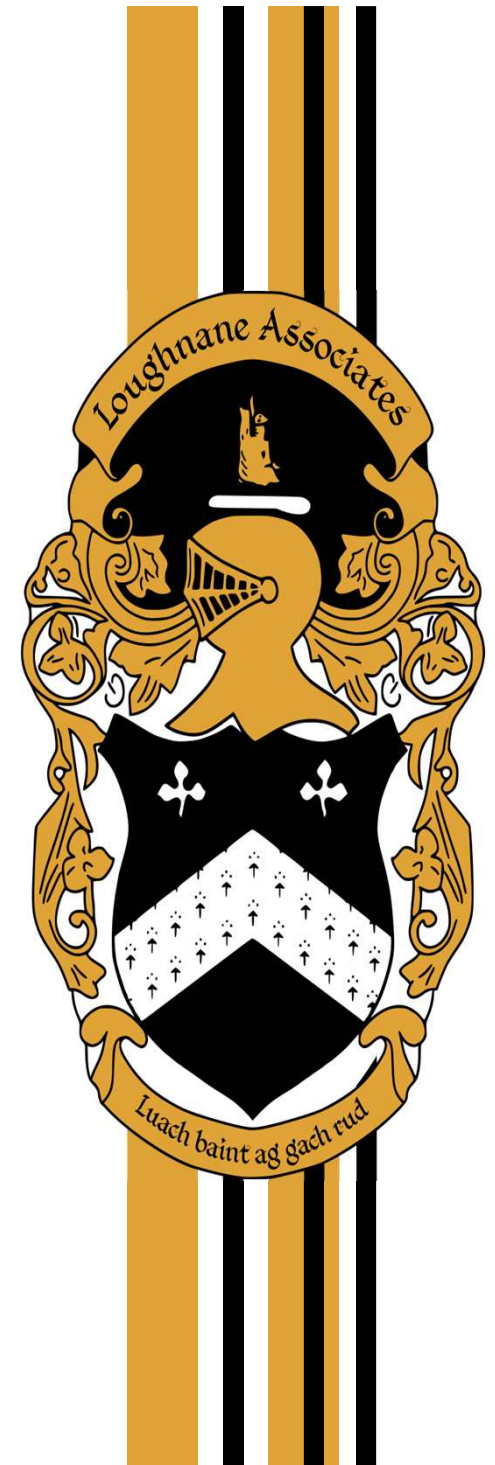


# Patterns and Anomalies, Synthetic Identities



**Loughnane Associates LLC**  
*Value Touches Everything*



**Huxley Orion**

# Patterns and Anomalies in Financial Analysis

## Agenda



1. Synthetic Identities
2. Business Patterns
3. Working with Business Records
4. Direct (Specific) Method
5. Record Patterns & Anomalies



# 1. Synthetic Identities



# Synthetic Identities

Uses of a combination of Primary and Supplemental elements to fabricate a person or entity in order to commit a dishonest act for personal or financial gain.

Primary  
Elements

**Unique to an individual or profile**  
(e.g., name, date of birth, Social Security number and other government-issued identifiers)

Supplemental  
Elements

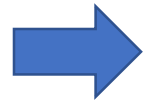
**Elements that can help substantiate or enhance the validity of an identity but cannot establish an identity by themselves**  
(e.g., mailing or billing address, phone number, email address or digital footprint)



# Recipe for a Synthetic Identity

## START WITH THE BASICS:

SSN/EIN  
Little Used SSN  
elderly, child,  
Immigrant,  
Deceased  
Closed Business,  
Shells, Shelves?  
Start ups  
Date of Birth



Primary  
Elements



Supplemental  
Elements

## 3. SPRINKLE AS AVAILABLE

Phone numbers  
Social Media  
Open Bank Acct  
Open Credit Card  
Join Organizations  
Open Crypto Acct  
Create Financial  
Records Online

## 2. ADD INGREDIENTS

[www.fakenamegenerator.com](http://www.fakenamegenerator.com)  
[www.stevemorse.org/ssn/ssn.html](http://www.stevemorse.org/ssn/ssn.html)

## 4. MIX WELL

Data Aggregators  
Credit Infrastructure



# Working a Synthetic Identity

- Apply for credit – creates a record for a new identity to be validated
  - Keep applying even if denied – someone will approve.
  - Get Credit Line and Start purchasing with the new card
- Establish history
  - Utilities, phone, rewards accounts, social media
- Manage the new identity
  - To be seen by credit monitoring services
  - Monitor using services like Credit Karma
    - Make sure no one is looking at you
  - Make payments
- They will come to you
  - New credit card offers
  - You become part of the market targeted family

Pretty Shallow:  
Missing things like  
Lack of previous  
addresses  
Lack of previous phone  
numbers  
Lack of relatives



# Merge Synthetic ID with Synthetic Business

- Create business name and register
  - County/City
  - State
- Incorporate Business with state
- Create D&B Profile online
- Register with entities like
- Create false documents
  - Bank Statements
  - Leases
  - Articles of Incorporation
  - Payroll Records
  - [www.pdfFiller.com](http://www.pdfFiller.com)

The screenshot displays the pdfFiller website interface. At the top, there is a navigation bar with links for HOME, FOR BUSINESS, DEVELOPERS, FEATURES, SUPPORT, START FREE TRIAL, PRICING, and LOG IN. The main header area features the text "Edit, create, and manage PDF documents and forms online" with a "Start for free" button. Below this is a large area for uploading documents, with a "Drag and Drop Documents Here to Upload" instruction and a "Select From Device" button. A search bar is visible with the text "leases" entered. The search results are titled "Welcome to the fillable PDF form library" and "Search Results for leases in pdfFiller search engine". Two search results are shown:

- basic rental agreement fillable**: Residential Lease Agreement THIS LEASE AGREEMENT (hereinafter referred to as the "Agreement") made and entered into this day of , 20 , by and between , whose address is (hereinafter referred to as "Lessor") and (hereinafter referred to as "Lessee"). WITNESSETH: WHEREAS, Lessor...
- greater boston real estate board standard form apartment lease**: GREATER BOSTON REAL ESTATE BOARD STANDARD FORM APARTMENT LEASE (FIXED TERM) Prepared By: Date: Name: Address: City/State/Zip: Phone Number: Lessor, ...

Each result has a "Fill Online" button.



# Michael Griffin carried on an informal business operation which purported to "repair" the credit of individuals. (2020-2021)



- Informed potential clients that he could boost their credit scores
- Provided Alternative Credit Profile Numbers to conduct credit transactions





# Griffin defrauded credit bureaus, end-users of credit information



- Credit Reporting Agencies – sell credit reports (Transunion, Equifax, etc)
- Credit Reports quantify the credit risk posed by customer
- Name and SSNs are identifiers CRAs use
- Furnishers: Credit reports information is sourced from information provided by entities



# Griffin worked a couple of angles

- Filed fraudulent disputes with the CRAs for “clients”  
Submitted false police reports he never filed and false dispute documents
- Offered “clients” the opportunity to utilize an alternative credit profile to conduct credit transactions.  
Credit profiles were fraudulently created by Griffin so that Griffin and co-conspirators could use them  
After the first accounts, additional accounts were opened

- Used stolen SSNs (incl. minors)
- Created a fraudulent credit profile
- Mail drop address
- Created temp. email and prepaid phone accounts
- Bought lots of open loop prepaid cards



# 2. Business Patterns



# Why focus on Patterns and Anomalies?



- “When you have eliminated the impossible, whatever remains, *however improbable*, must be the truth” (The Sign of the Four, Ch. 6)

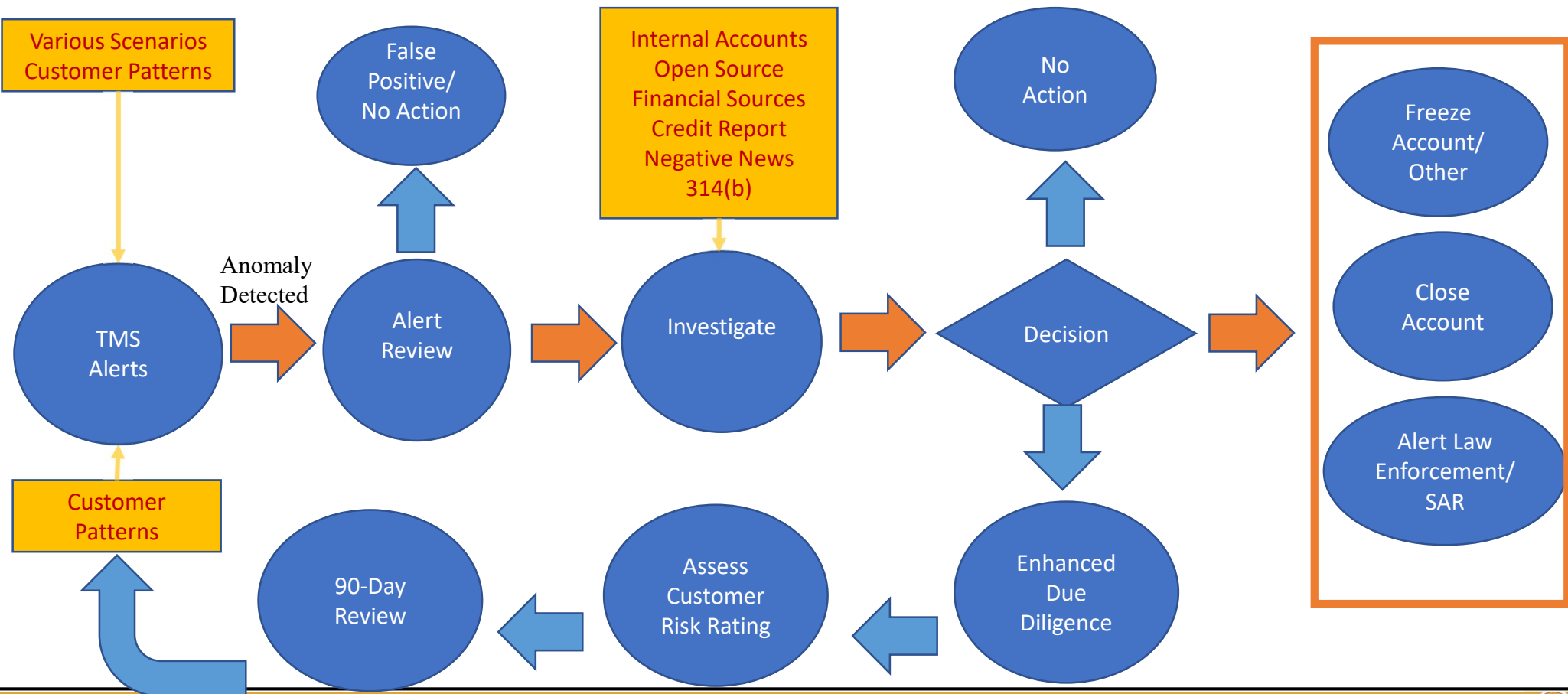
***We are trained from an early age to notice anomalies!***

**BEWARE the trap of culture bias!**



# How Banks Apply Business Patterns

## Bank Transaction Monitoring System Process



June 28, 2018

# National Health Care Fraud Takedown Results in Charges Against 601 Individuals Responsible for Over \$2 Billion in Fraud Losses

Largest Health Care Fraud Enforcement Action in Department of Justice History Resulted in 76 Doctors Charged and 84 Opioid Cases Involving More Than 13 Million Illegal Dosages of Opioids



False Claims to Medicare, Medicaid, TRICARE, private insurance for treatments that were medically unnecessary and often never provided



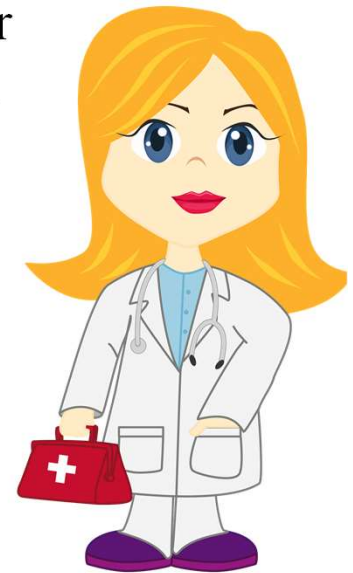
Over \$2 Billion in fraudulent billings



Kickbacks to Patient Recruiters & Beneficiaries



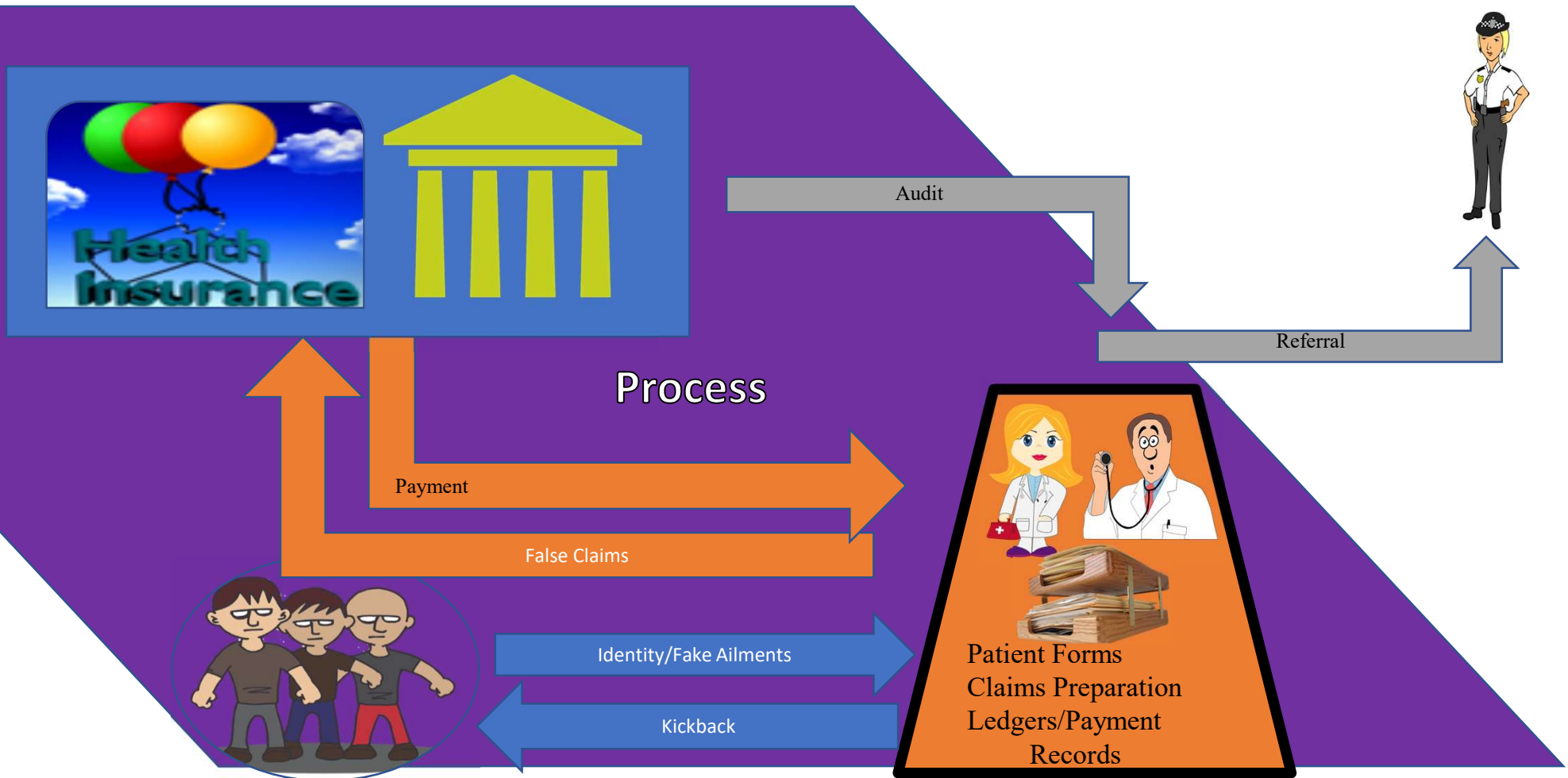
Doctors, nurses, licensed medical professionals health care company owners



<https://www.justice.gov/opa/pr/national-health-care-fraud-takedown-results-charges-against-601-individuals-responsible-over>



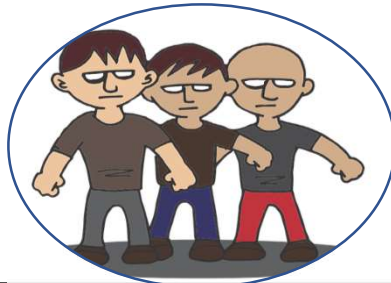
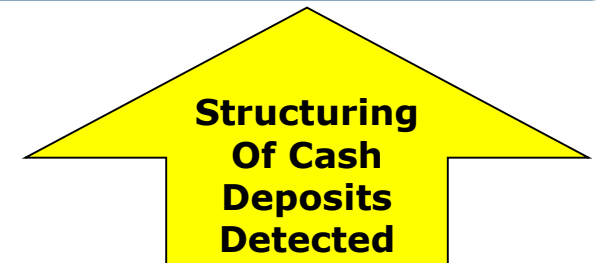
# Patterns in Healthcare Fraud



# Patterns in Healthcare Fraud

## Some Red Flags for a Diversion Investigation

- 🚚 Cursory medical examinations
- 🚚 Brief appointments
- 🚚 Cash-only practice
- 🚚 High patient volume
- 🚚 Patients traveling far distances for appointments
- 🚚 Lack of diagnostic testing
- 🚚 Prescribing excessive amounts of controlled substance to patients
- 🚚 Prescribing controlled substances for an unreasonable period
- 🚚 Continuing to prescribe controlled substances to the patient when it would be ineffective for treatment purposes
- 🚚 Elevating dosages of controlled substances with little justification
- 🚚 Treating patients with only controlled substances
- 🚚 Lots more.....





# 3. Working with Business Records



# Structured and Unstructured Data

## Structured Data: Recognizable and Predictable Structures

- Spreadsheets, formatted data
  - Sales Records, Payment Records, Expense Details, Payroll, Business Reports

## Unstructured: Not in a traditional spreadsheet or database

- Vendor Invoices, emails, social media, etc.

**INVOICE** LOGO

East Repair Inc.  
1912 Harvest Lane  
New York, NY 12210

**BILL TO**  
John Smith  
2 Court Square  
New York, NY 12210

**SHIP TO**  
John Smith  
3787 Pinewind Drive  
Cambridge, MA 12210

**INVOICE #** US-001  
**INVOICE DATE** 11/02/2019  
**P.O.#** 2312/2019  
**DUE DATE** 26/02/2019

QTY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Front and rear brake cables	100.00	100.00
2	New set of pedal arms	15.00	30.00
3	Labor 3hrs	5.00	15.00
Subtotal			145.00
Sales Tax 6.25%			9.06
<b>TOTAL</b>			<b>\$154.06</b>

*Thank you* **TERMS & CONDITIONS**  
Payment is due within 15 days  
Please make checks payable to: East Repair Inc.

CUSTOMER SALES DATA

Date	Customer	Invoice	Amount
4/12/2019	B3456	J0901	\$10,000
5/9/2019	B3456	J0901	\$10,000
5/10/2019	B6789	J0910	\$15,365



# Data Mining

- Search for unclear patterns, finding predictive information, method to examine structured and unstructured business data.
- Sources of Data:
  - Central Systems (mainframes, cloud)
  - Disaster Recovery Systems
  - Data Warehouses
  - Laptops
  - Mobile Devices of all types
  - Business Operation Systems
    - (security systems, GPS, time card, key card, etc)
- Consider possible non-digitized data, such as:
  - Visitor/Access Logs, Appointment Logs
- Financial institutions, VASPs



# Working with Business Records – Benford's Law

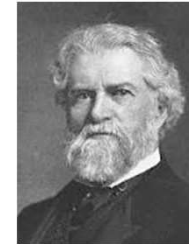
## ☞ Payment to Invoice Comparison

- Is the amount consistent the business in the amount they should be?
- Are they transnational when transnational makes no sense?
- Are they regular or intermittent or one time? And does that make sense?

## ☞ Duplicate Payments – an honest mistake that can be used for dishonest reasons

## ☞ Threshold Authorization Level

## ☞ The amount of activity

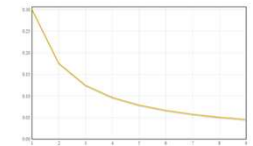


Simon Newcomb  
1835-1909



Frank Benford  
1883-1948

Exploring Benford's Law



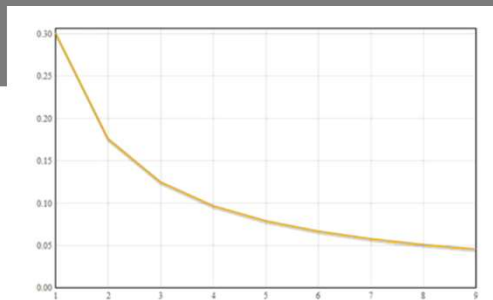
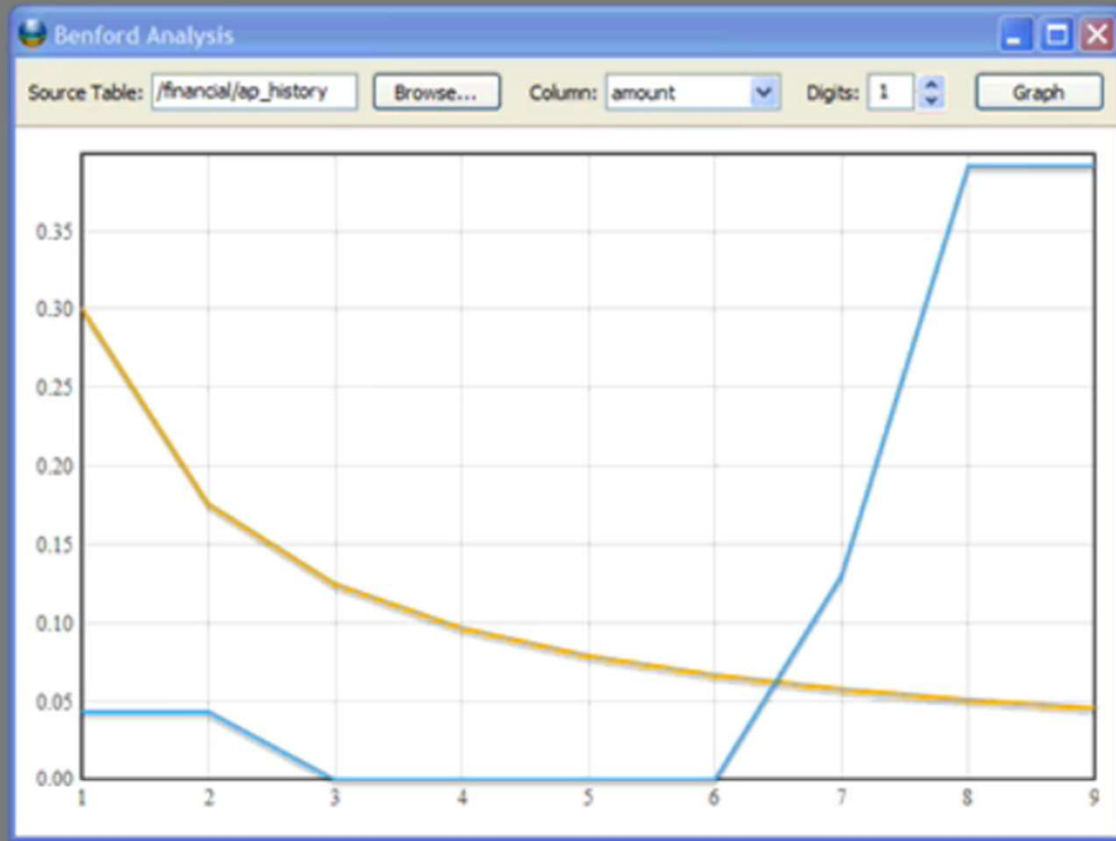
kinix

First Digit	Probability
1	30.1%
2	17.6%
3	12.5%
4	9.7%
5	7.9%
6	6.7%
7	5.8%
8	5.1%
9	4.6%



Vend_no	Check_date	Check_number	Amount
363254	10/09/1992	51248	1,927.48
363254	10/09/1992	51252	27,902.31
363254	10/14/1992	51954	86,241.90
363254	10/14/1992	51955	72,117.46
363254	10/14/1992	51958	81,321.75
363254	10/14/1992	51959	97,473.96
363254	10/19/1992	52104	93,249.11
363254	10/19/1992	52105	89,658.17
363254	10/19/1992	52108	87,776.89
363254	10/19/1992	52110	92,105.83
363254	10/19/1992	52118	79,949.16
363254	10/19/1992	52121	87,602.93
363254	10/21/1992	52128	96,879.27
363254	10/21/1992	52129	91,806.47
363254	10/21/1992	52134	84,991.67
363254	10/21/1992	52138	90,831.83
363254	10/21/1992	52139	93,766.67
363254	10/23/1992	52148	88,338.72
363254	10/23/1992	52149	94,639.49
363254	10/23/1992	52175	83,709.28
363254	10/23/1992	52178	96,412.00
363254	10/23/1992	52185	88,432.86
363254	10/23/1992	52189	71,552.16

Leading Digit	Probability
1	30.1%
2	17.6%
3	12.5%
4	9.7%
5	7.9%
6	6.7%
7	5.8%
8	5.1%
9	4.6%



# Sample Chart of Accounts

Index	Account No.	Account Name	Level	Type	Class
1					
2					
3		<b>ASSETS</b>	1	Control 1	Asset
4		Cash and Bank	2	Control 2	Asset
5	1000	Petty cash I	3	Detail	Asset
6	1100	Petty cash II	3	Detail	Asset
7	2000	Bank account - Citibank	3	Detail	Asset
8	2100	Bank account - UniCredit	3	Detail	Asset
9					
10		Accounts Receivables	2	Control 2	Receivable
11	3000	Accounts receivable A	3	Detail	Receivable
12	3100	Accounts receivable B	3	Detail	Receivable
13					
14		Tax Receivables	2	Control 2	Asset
15	3200	Tax receivables	3	Detail	Asset
16					
17		Fixed Assets	2	Control 2	Asset
18	4000	Machinery, equipment, furniture	3	Detail	Asset
19	4200	Vehicles	3	Detail	Asset
20	5000	Buildings	3	Detail	Asset
21	5500	Accumulated Depreciation	3	Detail	Asset
22					
23		<b>LIABILITIES</b>	1	Control 1	Liability



# A Look At Business Records

Medlin General Ledger [Your Company Name Prints Here]

File Chart of Accounts Transactions Reports Bank Reconciliation Configure Help

Enter or Change Transactions

Description	Check Number	Date	Account Number	Amount	*YTD Entry
Gas Bill	12811	01/01/07	880	41.99	
Electric Bill	12812	01/01/07	880	23.04	
Water Bill	12813	01/01/07	880	127.11	
Telephone Bill	12814	01/01/07	874	66.37	
Owner Withdrawl	12815	01/01/07	476	1300.00	
Puurchases	12816	01/01/07	611	164.61	
Accounting Fee	12817	01/01/07	744	125.00	
Owner Withdrawl	12818	01/01/07	476	1100.00	
Bldg - Other	12819	01/01/07	770	127.23	
<b>Supplies</b>	<b>12820</b>	<b>01/01/07</b>	<b>863</b>	<b>68.85</b>	
Garbage Bill	12821	01/01/07	880	17.00	
License Fee	12822	01/01/07	870	33.60	
Owner Wlthdrawl	12823	01/01/07	476	1100.00	
Interest	12824	01/01/07	816	46.68	
Purchases	12825	01/01/07	611	344.91	

Add	Total	Find	Help	Posting Total	22.71
	Insert	Delete		Check 12820	68.85

Edit a single field by clicking on the field.  
Use arrow keys, <PgUp>, <PgDn>, <Home>, or <End> to view entries.



# What are the types of data you might want to consider in Business Pattern Analysis

## Bank Records

- SARs, CTRs, Cash Sales, Due Diligence and Risk Analysis reports

## Insurance Records

- Including Risk Analysis reports

## Trade Documents

## Tax Records

## Other communications

- Apps
- Alternate remittance activity
- Use of hawala or other method consistent with culture and location
- Bulk Cash

## Internal business records





# Business Records in Small Business



Financial Statements

Gross Receipts (income)

Purchases

Expenses

Travel, Transportation, Gifts

Assets

Taxes



Invoices

Credit Card charge slips

Petty cash slips for small cash payments

Asset Documents (purchase, value, deduction, use, selling price)

Employment taxes (\*\*names)

Cancelled checks

Bank Deposit

Receipt Books



# Rules for Data Analysis

The purpose of data analysis involves running targeted tests against data to identify anomalies

Has the ability to detect fraud or deception:

## Rule #1: Understand the data you are obtaining

- If you don't know why it was created and its intended purpose...

## Rule #2: Plan Your Approach

- Understand your tools
- What is your investigative objective and scope?

## Rule #3: Collect and Work Data using correct evidence practices

- Verify the Data
- Cleanse and Normalize the Data (no GIGO)
  - Known errors
  - Unreadable characters

## Be alert to false positives



# 4. Direct (Specific) Method



# Direct Item Method Analysis

## ☞ Direct (Specific Item) Method

### ☞ Best Use In:

- Understatement of Income Scheme
- Overstatement of Income Scheme
- Fraudulent Claims for Credits of Exemptions



## ☞ Indirect Methods

☞ Requires gathering evidence




☞ Analysis is usable in court




Net-worth method is used to prove illicit income circumstantially






# Reminder: Personal Net Worth Analysis




Robert

   Establish a reliable beginning net worth (opening net worth) which includes all of the assets and liabilities on hand (Base Year)

   Obtain books/records that are available

   Cash on Hand – important

   Banks, stockbrokers, other 3rd party sources, bankruptcy

   Examine Financial Statements

   Where else?

[www.valuetoucheseverything.com](http://www.valuetoucheseverything.com)




Training Purposes Only

Assets:	
Cash on Hand	\$10,000
Cash in Accounts	\$40,000
Checking	\$15,000
Savings	\$5,000
Brokerage	\$25,000
Securities	\$15,000
Vehicles	\$25,000
Business Equipment	\$12,000
Real Estate	\$750,000
Personal Items (collectibles, jewelry, etc)	\$35,000
Negotiable Instruments	\$500
<b>Total Assets:</b>	<b>\$932,500</b>
Less (Adjust as needed):	
Loans	\$35,000
Notes	\$50,000
Accounts Payable	\$30,000
Credit Card Balance	\$5,000
Mortgage	\$35,000
Accumulated Depreciation	\$5,000
<b>= Net Worth</b>	<b>\$475,000</b>
- Prior Year's Net Worth	\$400,000
= Increase (Decrease) in Net Worth	\$75,000






# Direct (Specific) Method

## Direct:

-  Most preferred method
-  Uses reported income and expenses, with support in books and records
-  Usually summarized in tax returns so it is easier to analyze for anomalies

## Can be used to identify:

-  Understatement of income
-  Overstatement of Expenses
-  Fraudulent Claims for credit and exemptions



# Direct (Specific) Method

## What John Smith reported

Payment Records	Date	Amount	Total
Acme Trade	09/01/2014	\$3,000	
Acme Trade	08/01/2014	\$6,000	\$9,000
Brigand Company	06/30/2014	\$8,000	
Brigand Company	03/01/2014	\$5,000	
Brigand Company	02/28/2014	\$2,000	\$15,000
Cleveland Consulting	07/01/2014	\$1,000	
Cleveland Consulting	03/30/2014	\$5,000	\$6,000
Total Reported Paid			\$30,000

## What We Find Out

External Vendors	Date	Amount	Total
Acme Trade	09/01/2014	\$3,000	
Acme Trade	08/01/2014	\$9,000	\$12,000
Brigand Company	06/30/2014	\$8,000	
Brigand Company	03/01/2014	\$7,000	
Brigand Company	02/28/2014	\$2,000	\$17,000
Cleveland Consulting	07/01/2014	\$10,000	
Cleveland Consulting	03/30/2014	\$5,000	\$15,000
Total Paid			\$44,000
Delta			\$14,000

- ✓ Overstated Payments - \$14,000
- ✓ Delta not accounted for




# Direct (Specific) Method

## What Bill reported as receipts

Bill: Source Records	Date	Amount	Total
Echo Hearing Aids	5/10/2017	\$11,000	
	6/20/2017	\$15,000	\$26,000
Parson Printing	2/15/2017	\$3,000	
	8/10/2017	\$9,000	
	1/28/2017	\$7,000	\$19,000
Johnny's Collar	11/11/2017	\$14,000	
	12/20/2017	\$20,000	\$34,000
Total Reported Receipts			\$59,000

## What We Find Out

Info from External Sources	Date	Amount	Total
Echo Hearing Aids	5/10/2017	\$16,000	
	6/20/2017	\$15,000	\$31,000
Parson Printing	2/15/2017	\$8,000	
	8/10/2017	\$9,000	
	1/28/2017	\$20,000	\$37,000
Johnny's Collar	False	\$0	
	False	\$0	\$0
Total Receipts			\$68,000
Delta			\$49,000

- ✓ Understated Receipts
- ✓ Receipts from an unknown source





# 5. Record Patterns & Anomalies



# Financial Transaction Anomalies

- Rapid offshore transfer of deposited funds
- Unrealistic wealth when compared to client profile
- Unrealistic explanations of financial condition
- Unusually complex method of buying/selling financial products
  - Go across town to cash checks
  - Unusual use of MSB or financial services, not consistent with profile
    - A business that uses money orders instead of checks for example
- Avoiding identifying ultimate account beneficiaries
- Financial relationships with individuals/businesses that do not fit the profile
- Rapidly changing, one-time phone numbers, addresses



# Personal Records



Birth/Adoption certificates



Payroll statements



Driver's License



Passport



Military record of service



Alimony/child support



Citizenship papers



Check book/Bank Statements



Tax Statements/Pers. Property



Investment Accounts



Leases/Utility Bills



Retirement Accounts



Credit Reports



Notes, records



Investments



Deeds



Promissory Notes



Insurance Policies



Vehicle Titles



Will



# Changes in Personal Patterns

- Unexplained Wire Transfers (foreign countries)
- Numerous and frequent cash withdrawals; inquiries of balance
- Frequent domestic travel, paid in cash
- Unrelated or unexplained authorized users to accounts
- Same phone number used by multiple people
- Same address used by multiple people
- No normal living expenses or commonly expected items found in bank records or credit cards



# Patterns in Business Financial Records

- **Checks**
  - Dates, check number, amount, payee, signer, endorser,
- **Credit Card records**
  - Dates, transaction number, amounts, vendor, location, time
- **Wire transfers**
  - Dates, amounts, sender, bank and account of sender, beneficiary, bank and account number of beneficiary
- **Ledgers**
  - Date, amount, purpose of transaction



# Patterns in Business Financial Records

- Source and Destination
- Time/Date Stamps
- Patterns of Payments
  - When are employees paid?
  - When are vendors paid?
  - Any out of cycle payments?
- Frequency of transactions
  - Daily? Weekly? Monthly?
- Change in activity
- Environmental Factors



- Check Numbers
- Type of Transaction
- Cashier's Checks?
- Money Orders?
- Stamped/Signer Endorser
  - Separation of duties





# Patterns and Anomalies

*Questions?*

